
On the track of the African storks

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Une petite population de Cigognes blanches *Ciconia ciconia* niche en Afrique du Sud en quatre localités depuis les années 1930. Contrairement aux Cigognes blanches européennes, les nicheuses sud-africaines restent toute l'année dans les environs de leur lieu de nidification. Ceci n'est toutefois pas les cas de leur progéniture. Afin de découvrir où les jeunes vont, cinq oisillons du Cap occidental ont été munis de balises Argos, permettant de les suivre par satellite, en décembre 2000. Fin janvier 2001, les cinq jeunes avaient quitté l'Afrique du Sud. En février, quatre d'entre eux trouvaient la mort, respectivement au Botswana, en Zambie et au Zimbabwe (deux), dans la zone qui subissait l'effet des grosses pluies du bassin du Zambèze qui provoquèrent des inondations catastrophiques au centre du Mozambique. Le cinquième se trouvait dans le sud du Mozambique pendant cette période; il s'est déplacé vers le nord-est du Zimbabwe en mars; le 5 mai il s'est dirigé brusquement vers le nord, traversant la Zambie en direction de la République Démocratique du Congo.

It is well known that White Stork *Ciconia ciconia* breeds in Europe and south-west Asia and migrates to Africa for the northern winter. Most take advantage of the narrowest sea crossings, passing south over Gibraltar or Thrace in August–September. Storks begin to arrive in Zimbabwe from around October, then slowly move south, reaching the Western Cape of South Africa in November–December^{1,2}. These birds do not breed in southern Africa. However, there is a missing piece in the jigsaw of the White Stork story.

One pair nested near Oudtshoorn, 400 km east of Cape Town, in the 1930s and in 1940². Since 1961, up to four pairs have bred in the Bredasdorp region, 200 km east of Cape Town and very close to the southern tip of Africa at Cape Agulhas. In the early 1970s, some of the eggs from these nests were taken to Tygerberg Zoo and the chicks artificially reared. In 1975, wild storks began building a nest on one of the zoo's cages. They were unsuccessful that year, but by 2000 five pairs of free-flying White Storks were nesting on various cages of the zoo, four pairs having large chicks by early December. Homey³ has published an historical overview of White Stork breeding in the Western Cape.

Unlike those storks that breed in Europe, the South African breeders appear to remain in the vicinity of the nest site year-round. However, their offspring do not. The question is 'where do these young storks go?' Some clues have derived from ringing chicks at the Bredasdorp nests. Two of the chicks in a 1961 nest were found dead farther north in Africa: one in Free State, South Africa, and the other close to the Zambia–Tanzania border. But, the full story remained to be discovered.

With this in mind, a team of ornithologists from the Max Planck Institute, Germany, and BirdLife Belgium travelled to Cape Town in November 2000 to place

satellite transmitters on five White Stork fledglings in the Western Cape. Four of the transmitters were placed on nestlings in nests above the cages at the Tygerberg Zoo, and one was attached to one of the nestlings in the only nest near Bredasdorp in 2000. As part of a collaborative project with the Avian Demography Unit (ADU) at the University of Cape Town, the team hoped to unravel the mystery of what happens to these birds after they leave the nest. The mammalian inhabitants of the zoo watched bemused as an ornithologist climbed up a ladder, carefully took a chick from the nest and brought it into the shade. Here, a lightweight solar-powered satellite transmitter was fitted by means of a harness. Each chick was also fitted with a metal ring on one leg and a colour ring, with a clearly discernible number, on the other. The latter can be read in the field with binoculars. Those chicks that were not satellite tagged were marked with a patch of yellow picric dye on one wing. The chicks remained remarkably docile during the entire performance, permitting their wings, bill and tarsi to be measured. They were then returned to their nests, to the relief of their bill-clapping parents.

Before the birds left the nest we wrote: 'Mortality among young birds is high and it is possible that some, or all, of the young birds may die before moving very far. However, any that do survive will help to solve the puzzle of what happens to White Storks, born and bred in South Africa'.

But we were lucky, all five fledged successfully. During late December 2000 and early January 2001, the signals indicated that they had left their nests and were making short-distance trips into neighbouring areas. By 21 January 2001 all were outside the borders of the Western Cape and by the end of the month they were all outside South Africa. They had survived the critical first few weeks and we breathed

a little easier. But, a bit too soon. We had reckoned without the rains over the Zambezi River valley in February 2001, which brought devastating floods to Mozambique.

'Tiger' set out from Tygerberg Zoo on 8 January and by 27 January was in the Luangwa Valley in north-east Zambia, some 4,000 km away. It spent nearly two weeks there, the daily satellite positions being from different places within the valley. Pete Leonard, one of Zambia's leading birders, reported: 'The area is not densely populated with people. The valley has rolling hills covered in scrub and poor miombo woodland until you hit the escarpments on either side and get into decent woodland. The storks make use of the oxbows on the main river but are probably more often on the smallish floodplains along the tributaries'.

We do not know if 'Tiger' made this journey in the company of adult White Storks returning to Europe, but this appears likely. If the storks had continued travelling north at the speed they had been travelling, they would have arrived in Europe while it was still winter there. The Luangwa Valley is probably one of the feeding areas they use en route, and where they remain for a few weeks before moving on.

By early February, siblings 'Misty' and 'Leo' were both in the vicinity of the Kariba Dam, on the Zambezi River between Zimbabwe and Zambia, while 'Rembrandt' was in Botswana and 'Saturn' in the Save River floodplain in southern Mozambique. Then the rains came and regular signals were received only from 'Misty' and 'Saturn'. This was not cause for alarm because sunny conditions are needed to power the solar transmitters and signals transmitted to the satellites do not easily penetrate thick cloud or rain. Suddenly, on 28 February, the 'activity counter' in 'Misty's' satellite tag became stuck on 166, indicating that this bird was definitely dead. Towards the end of April the dreaded letter from Zambia arrived. Arthur Zyambo had found satellite transmitter no. 20527 on a dead and half-eaten stork on the banks of the Luangwa River during February. This was (or had been) 'Tiger'. 'Leo' and 'Rembrandt' are almost certainly also dead. Having surmounted the hurdle of the first few weeks out of the nest, and having covered over 2000 km, it was disappointing that four out of five birds were lost in such a short period of time. But these are the realities of life for White Storks, and for most wild animals

By mid-May, only 'Saturn' remains alive. On 13 March, this bird crossed from Mozambique into the eastern highlands of Zimbabwe. It spent a month in the vicinity of Harare, in north-east Zimbabwe and

we anticipated that it would spend the rest of the southern winter there. Suddenly, on 5 May, 'Saturn' got itchy wings and headed north. It made hops of c200 km per day and within a week had crossed Zambia and was just south of the equator in the Democratic Republic of Congo, near the shores of Lake Tanganyika. Its progress will continue to be reported on the ADU website <http://www.uct.ac.za/depts/stats/adu>.

We are still digesting what we have learnt. The biggest surprise was that the birds left their nest areas so early. We had expected them to head north at the time we believe the European breeders migrate, in late February–March. We were surprised at the long distances flown each day and that the birds followed such direct routes; all except 'Saturn' were taking the 'stork highway' to Europe, determined by a decade of satellite tracking of Northern Hemisphere birds. This is what makes us believe they were in the company of adults returning to Europe. This year, the main route took the birds into a hostile weather system, and the only individual to survive was that which initially took the unorthodox route through the Kruger National Park to Mozambique.

The Vogelwarte Radolfzell of the Max Plank Institute in Germany has been so intrigued by the results that they intend repeating the exercise in the coming breeding season. So keep watching the ADU website.

Acknowledgements

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References

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